

Anti-glare safety divider using modular approach

This invention is related to the anti-glare light shields for highway and local road dividers.

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BACKGROUND OF THE INVENTION

When driving a car on a highway at nighttime, drivers become temporarily blinded from the glaring light of oncoming vehicles on the 10 opposite side of the concrete road barrier. Many types of anti-glare panels are installed onto road dividers in order to shield the light from ongoing traffic. The purpose of this invention is to provide anti-glare light shields, which minimize the glare of oncoming traffic without blocking the view of the opposite road. It is efficient in that the anti-glare safety dividers utilize 15 the existing low concrete barriers. A convenience of this invention is that it provides anti-glare dividers for various roadways without concrete barriers as well as for highways with concrete barriers.

1. FIELD OF THE INVENTION

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The current invention is correlated to an anti-glare safety light shield, mountable on a road divider, comprised of a blade frame and a series of vertical blades rigidly installed in a frame with. The vertical blades incrementally change angles from 60 degrees to 90 degrees dependant upon 25 the direction of traffic and/or rotating blades having more than two wings per blade.

2. DESCRIPTION OF THE PRIOR ART

5 U.S. Patent No. 4,338,041 to Schmanski, U.S. Patent No. 5,181,695 to Arthur, and U.S. Patent No. 5,641,241 to Rushing illustrates an anti-glare plate system by mounting plates or paddles onto the road barrier with fixed and/or adjustable distances between the plates. Those plates are mounted vertically and lie across the road barrier. When two cars from opposite lanes
10 approach one another from a distance, the lights from the opposite car appear to flash on and off because of the gaps between the panels. U.S. Patent No. 5,015,119 to Schmanski and U.S. patent No. 5,022,781 to Smith illustrate another type of anti-glare module. In their invention, the plate or modules are mounted vertically along the road barrier. U.S. Patent No.
15 4,751,893 to Brantley illustrates a different type of corrugated module mounting on the road barrier. U.S. Patent No. 4,249,832 to Schmanski illustrates a vertically rotating web structure to protect a delineator installed on the median barrier during impact.

None of the prior arts provide anti-glare blades to minimize or
20 partially block out the light of oncoming vehicles from the opposite side of the road barrier.

SUMMARY OF THE INVENTION

In order to overcome the aforementioned problems, an anti-glare safety divider using blade frames that can house vertical blades in varying degrees and angles has been invented. This module that consists of a blade frame and built-in vertical blades may be mounted between two horizontal bars/pipes, which connect the poles/pipes by erecting these into the concrete barriers or into the ground itself.

This invention blocks headlight glare almost completely from oncoming vehicles that are moving between 0 to 45 degrees. Viewing from the innermost lane (leftmost in the United States) is worst problem in a multi-lane roadway.

Glare coming from a 45-degree angle or higher will be blocked effectively, although not completely, with incrementally angled vertical blades. Blades with incremental angles increase efficiency for the drivers on the other lanes of the multi-lane roadway.

Another type of glare blocking device has been invented. This particular type uses a rotor with wings in order to make it movable. It is designed to rotate with the impact of wind or whirlwind caused by passing vehicles as it serves as a glare-blocking device.

The primary object of this invention is to block headlight glare effectively with a wide range of angles from oncoming vehicles. This invention can also provide an effective solution to headlight glare on various roadways because the anti-glare safety divider may be used either on top of the concrete divider or on the ground where concrete barriers are not suitable

to use. The object is to alleviate pressure from the side wind or whirlwind by providing space between blades through which air can flow freely. The space between the blades also allows people to see the other side of the street when installed in the city.

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An added objective is to provide a method that requires low maintenance. Modular approach allows maintenance crew to replace a damaged section relatively easily. Another aim is to provide a deterrent to jaywalking.

- 10 An additional purpose is to reduce the risk of traffic accidents in a bend of the road or in a no passing zone on a two-lane roadway.

BRIEF DESCRIPTION OF THE DRAWINGS

- 15 Fig. 1 is the perspective view of a glare proof safety divider frame mounted on a road barrier. It is equipped with blades having different angles dependant on the plane of the road.

- 20 Fig. 2 is a cross sectional view of the anti-glare safety divider mounting frame along the line a-a' in figure 1.

Fig. 3 is an aerial cross sectional view of a blade along the line b-b' in Fig. 1.

- 25 Fig. 4 is an aerial cross sectional view of an alternating arrangement of blade frames from Fig. 3.

Fig. 5 is a perspective view of a three-web wing anti-glare safety divider blade frame for mounting onto a road barrier.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Fig. 1 is the perspective view of an anti-glare safety divider frame (1) mounted on a road barrier (2), which is equipped with a blade frame (3) having a series of vertical blades (12) that are rigidly installed into a frame with incrementally changing angles from 60 to 90 degrees depending on the direction of traffic. The anti-glare safety divider mounting frame (1) is comprised of two intersecting bars (4), two vertical poles/pipes (5), blade frame (3), plurality of extends (6) extending from the blade frame (3), and bolts (7) and nuts (8) for attaching the blade frame (3) to the crossing bars (4). The anti-glare safety divider frame (1) is mounted on and anchored (9) onto a road barrier (2).

Fig. 2 is a cross sectional view of the anti-glare safety divider mounting frame (1) along the a-a' line in Fig. 1. The intersecting bars (4) are thin and rectangular. The blade frame (3) has a plurality of extends (6) that have holes (11) for bolts (7) and nuts (8) in order to fix the blade frame (3) onto the crossing bars (4). Washers (10) are inserted between the crossing bars (4), bolts (7), and nuts (8). The width (8-1) of the frame (3) ranges from 2cm to 30cm depending on the strength of the material used for the frame. The frame is the same width as the blades (12). The length of the frame (3) ranges from 60cm to 120cm. Height of the frame (3) ranges from 50cm to 80cm when installed onto the concrete barrier. The height of the frame (3) may be extended from 100cm to 150cm when installed in a local street.

Fig. 3 is an aerial cross sectional view of a blade frame (3) along the b-b' line in Fig. 1. The pluralities of blades (12) are installed inside of a

blade frame (3). The installed blades (12) can gradually change angles from 90 to 60 degrees depending on (13) the transactional lines (14) of the road. The blades are made of non-transparent and sturdy, yet lightweight material.

Fig. 4 is an aerial cross sectional view of an alternating arrangement of 5 the anti-glare safety blade frame (3) from Fig. 3. Arranging the blade frames (3), like Fig. 4, causes the light from oncoming traffic to be shielded more effectively.

Fig. 5 is a perspective view of another blade frame (3) that is equipped with four web rotating wing blades. Fig. 5 illustrates only one example of 10 the various blades. The number of wings per blade can be changed from two to eight. Each four-web wing blade (19) is attached to a rotating shaft (20), which is installed vertically onto a frame (3) between the upper-plates (21) and lower-plates (22) by conventional means (23) such as bearings. These 15 rotating blades will weaken the strength of light from a vehicle across the road barrier while leaving a gap through which to view the highway across the barrier.

The best mode of this invention is to make a module and blades with 20 light and various materials, such as aluminum, polystyrene, solid PVC, polypropylene, high-density polyethylene, and stainless steel. The blades should be installed within the limit of the width of the blade frame.